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(54) ELECTRONIC DEVICE AND DATE/TIME SETTING METHOD

(57)Abstract:

PROBLEM TO BE SOLVED: To provide an electronic device together with a date/time setting method which comprises a date/time setting function of good operativity where laborious operation at correcting date/time is reduced.

SOLUTION: A battery 26 is connected to a digital camera 10 so that an internal clock 20 begins to clock with its initial value and a power-source switch of an operation part 32 is turned on so that the clock value of the internal clock 20 is compared to the date/time information in a non-volatile memory 34. If the former clock value is closer the value is written in the non-volatile memory 34. If the latter date/time information is closer automatic date/time correction with a received electric-wave is processed. If the date/time correction is performed manually a date/time correction is performed with a value represented by the date/time information recorded in the non-volatile memory 34 and an external recording medium 18 as a starting point and after date/time setting is complete the set date/time information is stored in the non-volatile memory 34.

CLAIMS

[Claim(s)]

[Claim 1] An electronic device driven by a main power supply comprising:

A power means by which this device supplies said main power supply to this device.

a time check which clocks time -- a means.

A nonvolatile memory measure memorized so that read-out of date information

showing time is possible.

said time check -- a time check clocked by a means -- a value.

A comparison means to compare date information memorized by said memory measure.

responding to a comparison result in this comparison means -- said time check -- a time setting-out means to set time as a means.

[Claim 2]if said date information is beforehand memorized by said memory measure and a main power supply is supplied to it from said power means in the electronic device according to claim 1 -- said time check -- a means starts a time check -- said comparison means -- said time check -- an electronic device comparing a value with said date information.

[Claim 3]in the electronic device according to claim 1this device responds to operation of this device -- said time check -- a time check in a means -- an electronic device making said memory measure memorize by making a value into said date information.

[Claim 4]date information which received said time setting-out means in said reception meansand has been recognized including a reception means which receives date information as which this device expresses the present time in the electronic device according to claim 1 -- said time check -- an electronic device setting it as a means.

[Claim 5]In the electronic device according to claim 1this deviceAn imaging means which picturizes a field and generates a picture signal according to this field imageIncluding a processing means to process said picture signaland an output means which outputs a picture signal processed by this processing means to a recording mediumsaid processing meansthe time of outputting said picture signal -- said time check -- a time check clocked by a means -- an electronic device outputting a time signal according to a value to said recording medium corresponding to this picture signal.

[Claim 6]date information by which said comparison means was recorded on said recording medium in the electronic device according to claim 5and said time check -- a time check clocked by a means -- an electronic devicewherein it compares a value and said time setting-out means performs time setting out according to a comparison result in this comparison means.

[Claim 7]in the electronic device according to claim 5 -- said time check -- said time setting-out meanswhen setting up time setting out to a means according to manual operationdate information which carried out temporary setting of the date information memorized by said recording mediumcorrected this date information that carried out temporary setting according to said manual operationand was this corrected -- said time check -- an electronic device setting it as a means.

[Claim 8]In the electronic device according to claim 5said processing meansA picture which said picture signal expresses including an image recognition means to recognize this image recognition meansbeing based on date information according to time which has recognized time based on a picture signal at the time

of picturizing a picture showing time and has recognized said time setting-out means in said image recognition means -- said time check -- an electronic device performing time setting out to a means.

[Claim 9] In the electronic device according to claim 1 -- said time check -- an electronic device when setting up time setting out to a means according to manual operation wherein said time setting-out means carries out temporary setting of the date information memorized by said memory measure and corrects this date information that carried out temporary setting according to said manual operation.

[Claim 10] In an electronic device driven by a main power supply this device a power means which supplies a main power supply which drives this device and a time check which clocks time -- with a means. A nonvolatile memory measure memorized so that read-out of date information showing time is possible said time check -- a time check clocked by a means -- with a comparison means to compare a value with date information memorized by said memory measure. responding to a comparison result in this comparison means -- said time check -- with a time setting-out means to set time as a means. date information which has recognized said time setting-out means in said voice recognition means including a voice recognition means which recognizes date information which inputs an audio signal according to a sound and this audio signal expresses -- said time check -- an electronic device setting it as a means.

[Claim 11] In an electronic device driven by a main power supply this device a power means which supplies a main power supply which drives this device and a time check which clocks time -- with a means. A nonvolatile memory measure memorized so that read-out of date information showing time is possible said time check -- a time setting-out means to set up time over a means and this electronic device and a host device [connect and] said time setting-out means sending out a requirement signal which requires said date information of said host device including a connecting means which receives date information sent out from this host device and being based on date information sent from this host device -- said time check -- an electronic device performing time setting out to a means.

[Claim 12] In the electronic device according to claim 11 said host device Are a computer system which has a real-time clock and this device is recognized A processing program which sends out the present total chronaxie according to said requirement signal is the introduced computer system and said time setting-out means An electronic device outputting said requirement signal to said host device via said connecting means after recognizing that said processing program is started.

[Claim 13] An electronic device comprising:

A detection means to detect operation information according to release operation for picturizing a field.

A time setting-out means to perform time setting processing to a clock means which clocks time following said operation information.

[Claim 14] In the electronic device according to claim 13 this device An electronic

device characterized by said time setting-out means performing time setting out to said clock means based on said picture information including an imaging means which picturizes a field following release operation and to picturize a processing means to process picture information obtained by this image pick-up and a clock means which clocks time.

[Claim 15] An imaging device wherein this device sets up time of said clock means from picture information of said image pick-up result in the electronic device according to claim 14 according to this recognition result including a recognition means to recognize time.

[Claim 16] In the electronic device according to claim 14 this device date information included in memory information memorized with this device and a time check of said clock means -- a comparison means to compare a value is included -- said time setting-out means -- said time check -- a case where time which said date information expresses rather than a value is progressing -- a time check of said clock means -- an electronic device correcting a value.

[Claim 17] An electronic device which has an imaging means which picturizes a field following release operation and to picturize comprising:

A processing means by which this device processes picture information obtained by this image pick-up.

A clock means which clocks time.

An input means which inputs analog information.

A time setting-out means to perform time setting out to said clock means based on said analog information.

[Claim 18] In the electronic device according to claim 17 said time setting-out means date information included in memory information memorized with this device and a time check of said clock means -- comparing a value -- this -- a time check -- a case where time which said date information expresses rather than a value is progressing -- a time check of this clock means -- an electronic device correcting a value.

[Claim 19] An electronic device which can operate by performing current supply by a cell characterized by comprising the following.

A recognition means by which this device recognizes the 1st date information given from the outside.

A judging means which judges whether there was any ***** of said power supply based on the 1st date information.

An update means which performs an update process according to a decision result of this judging means.

[Claim 20] An electronic device characterized by said ***** being what depended on said cell having been removed from this electronic device in the electronic device according to claim 19.

[Claim 21] An electronic device characterized by said ***** being what depended on a fall of a power supply of said cell in the electronic device according to claim

19.

[Claim 22]An electronic device characterized by said cell being a rechargeable battery in the electronic device according to claim 19.

[Claim 23]An electronic device wherein said judging means judges said ***** in the electronic device according to claim 19 based on the 2nd date information memorized with this device and a total chronaxie of said clock circuit including a clock circuit where this device clocks time.

[Claim 24]An electronic device if it is judged in the electronic device according to claim 19 that there was said ***** wherein said update means will carry out temporary setting of the total chronaxie of said clock circuit based on the 2nd date information memorized with this device.

[Claim 25]An electronic device wherein this device includes a correcting means which corrects said total chronaxie by which temporary setting was carried out according to operation information in the electronic device according to claim 24.

[Claim 26]An electronic device if it drives by current supply from said cell and ***** from this cell occurs in the electronic device according to claim 19 wherein the operation will stop said clock circuit.

[Claim 27]A time setting method which sets desired time as an internal clock which is built in an electronic device driven by a main power supply and clocks time comprising:

Date information this method was remembered to be by memory measure connected to said device.

A comparison process which compares a total chronaxie of said internal clock. Rather than date information of said memory measure when time which a total chronaxie expresses as a result of comparison of this comparison process is a latent root A determination process on which make said memory measure memorize date information according to this total chronaxie and time correction to said internal clock is made to make when date information of said memory measure is a latent root from time which a total chronaxie expresses.

A correcting process which makes time correction to said internal clock according to a decision result in said determination process.

A memory process which makes said memory measure memorize date information after correction when time correction is made in this determination process.

[Claim 28]A time setting method receiving electromagnetic waves transmitted in the time setting method according to claim 27 as said correcting process included said date information and setting date information which distinguished and distinguished said date information from this electromagnetic wave as said internal clock.

[Claim 29]In the time setting method according to claim 27 this method A recognition step which inputs date information expressed with analog information and recognizes time which this date information expresses A time setting method characterized by said correcting process setting said date information as said internal clock according to a decision result of this deciding

step including a deciding step which judges right or wrong of date information recognized in this recognition step.

[Claim 30] A time setting method said correcting process's carrying out temporary setting of the date information memorized by said memory measure and performing correction processing to time by which temporary setting was carried out in the time setting method according to claim 27 following manual operation.

DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the electronic device with which it had the internal clock which clocks time and the time setting method which performs time setting out to an internal clock for example is driven by a cell and relates to electronic devices such as a digital camera which can be carried and a time setting method for the same.

[0002]

[Description of the Prior Art] In recent years electronic devices driven with the battery of a primary battery or a rechargeable battery such as a digital camera and a Personal Digital Assistant are spreading. The date information used in such an electronic device as a recording date at the time of storing a variety of information in a memory etc. The date information which the date information used as attached information relevant to the photoed picture information was generated inside the device and was generated is saved with main information as the time stamp and film information in the case of film record.

[0003] The present date information in a digital camera is recorded as film information when photoing a field and recording the picture on information recording media such as a memory card for example. Thus when it can be referred to when the recorded date information reproduces a recorded image and date information is transposed to the file name of the graphics file it becomes easy to rearrange photograph data in a time series and it is useful for grasp of film information or the arrangement classification of a graphics file.

[0004] The clock circuit with a calendar function which generates such date information is formed for example with an integrated circuit and is called real-time clock (RTC) IC and current supply is carried out by main power supply such as a battery which usually drives a device. When the main power supply of a device is not supplied (i.e. when connection with a power receptacle serves as ** or main power supply such as a battery pack are removed from the device) A battery-back-up circuit is provided around a clock circuit so that a clock circuit may be driven in response to current supply from the backup cell for always driving.

[0005]

[Problem(s) to be Solved by the Invention] The necessity of removing or exchanging the battery pack which drives the device generates the small

electronic device in which such carrying is possible. For example in the case of the battery pack having a rechargeable battery charge by a battery charger is needed and a battery pack must be removed from an electronic device at this time. In a digital camera it is rare to always use it continuously all day long for example may be used for photography every [every / - / several days every number weekend] several [more] months. It is more desirable to remove the battery pack and the dry cell from the device during the long period of time when keeping it without using a camera etc. This is because it may become overdischarge and a cell may be damaged when cell capacity falls and it is neglected as it is by the minute amount internal power dissipation which includes not only the self-discharge of a cell but a clock drive when it is kept for a long period of time equipped with a battery pack. [0006] Especially in the portable electronic device it is required that small size and a weight saving should be promoted further. In order for the size to become small and to arrange them with a miniaturization at a narrow portion also about the manual operation button and operation dial for giving various setting out and operation directions operativity gets worse. An operation body system becomes complicated with advanced features of a device the function assignment to a manual operation button etc. increases and it has been increasing also about the operation frequency. Therefore for example calendar setting out and time setting operation to a clock circuit taking time and effort still more with an especially small device and setting them up simple without operating a small manual operation button etc. repeatedly since they are troublesome is called for.

[0007] Although having a backup cell required for continuous operation of a clock circuit on the other hand is generally performed a packaging area is reduced a small weight saving is attained and in order to cut down the cost a direction with few parts is desirable. In order to long-period-of-time-ize a backup period also in the capacity of a backup cell according to its big thing is needed and the size of a backup cell becomes large. A connector and the cable and terminal for connecting a backup cell to a circuit are needed and a packaging area is needed and weight also increases. Then it is possible to constitute a device so that a clock circuit may be driven only with the battery pack which drives a device and the battery back-up to a clock circuit may not be performed or only a little backup may be performed. however -- if a battery pack is removed from a device in this case the current supply to a clock circuit will also stop finally -- that time check -- operation stops. and time -- if unknown record data remains in order to interfere with a next arrangement classification whenever it uses a battery pack for a device equipping with its manual operation button etc. must be operated and a present date must be set as a clock circuit from the beginning. When an electronic device is a camera for example after this performs the time transfer method of a clock it must be photoed and a possibility of missing a photo opportunity during the setting operation of time generates it. In addition to the troublesomeness of the operation it was very impatient to have made time correction under such a situation.

[0008] This invention cancels the fault of such conventional technology and the

troublesomeness in the case of time correction is reduced. Also in the case where the power supply backup circuit to a clock circuit is excluded for the purpose of providing the electronic device and time setting method which have a time setting up function with good operativity, moreover -- even if it is when the backup time over a clock circuit is short, a man-machine interface is good -- operation -- a simple electronic device and time setting method are provided.

[0009]

[Means for Solving the Problem] In order that this invention may solve an above-mentioned technical problem in an electronic device driven by a main power supply, this device includes a power means which supplies a main power supply to this device, and a time check which clocks time -- with a means, a nonvolatile memory measure memorized so that read-out of date information showing time is possible, and a time check -- a time check clocked by a means -- responding to a comparison result in a comparison means to compare a value with date information memorized by memory measure, and a comparison means -- a time check -- a time setting-out means to set time as a means is included.

[0010] In order that this invention may solve an above-mentioned technical problem in an electronic device driven by a main power supply, this device includes a power means which supplies a main power supply which drives a device, and a time check which clocks time -- with a means, a nonvolatile memory measure memorized so that read-out of date information showing time is possible, a time check -- a time check clocked by a means -- with a comparison means to compare a value with date information memorized by memory measure, responding to a comparison result in a comparison means -- a time check -- date information which has recognized a time setting-out means in a voice recognition means including a time setting-out means to set time as a means, and a voice recognition means which recognizes date information which inputs an audio signal according to a sound and an audio signal expresses -- a time check -- it is set as a means.

[0011] In order that this invention may solve an above-mentioned technical problem in an electronic device driven by a main power supply, this device includes a power means which supplies a main power supply which drives a device, and a time check which clocks time -- with a means, a nonvolatile memory measure memorized so that read-out of date information showing time is possible, a time check -- a time setting-out means to set up time over a means, and an electronic device and a host device being connected, and a time setting-out means including a connecting means which receives date information sent out from a host device, sending out a requirement signal which requires date information of a host device, and being based on date information sent from a host device -- a time check -- time setting out to a means is performed.

[0012] This invention contains a detection means to detect operation information according to release operation for picturizing a field, and a time setting-out means to perform time setting processing to a clock means which clocks time following said operation information in order to solve an above-mentioned technical problem.

[0013] As for this invention, this invention is characterized by that an electronic

device which has an imaging means which picturizes a field following release operation and to picturize comprises the following again in order to solve an above-mentioned technical problem.

A processing means by which this device processes picture information obtained by image pick-up.

A clock means which clocks time.

An input means which inputs analog information.

A time setting-out means to perform time setting out to a clock means based on analog information.

[0014] Further in order that this invention may solve an above-mentioned technical problem this invention is built in an electronic device driven by a main power supply and is characterized by that a time setting method which sets desired time as an internal clock which clocks time comprises the following.

Date information this method was remembered to be by memory measure connected to a device.

A comparison process which compares a total chronaxie of an internal clock.

A determination process on which make a memory measure memorize date information according to a total chronaxie when time which a total chronaxie expresses is a latent root from date information of a memory measure as a result of comparison of a comparison process and time correction to an internal clock is made to make when date information of a memory measure is a latent root from time which a total chronaxie expresses.

A correcting process which makes time correction to an internal clock according to a decision result in a determination process and a memory process which makes a memory measure memorize date information after correction when time correction is made in a determination process.

[0015]

[Embodiment of the Invention] Next with reference to an accompanying drawing the example of the electronic device by this invention and a time setting method is described in detail. Reference of drawing 1 shows the example of 1 composition of the digital camera as an electronic device in this example. This digital camera 10 is an imaging device which processes the video signal of the field picturized in the image pick-up part 12 by the arithmetic processing section 14 and accumulates the processed picture signal in the external recording medium 18 equipped by the recording reproduction section 16. The portion which is directly unrelated to this invention in the following explanation omits a graphic display and its explanation.

[0016] At a year the moon a day of the week and the time the camera 10 in this example is provided with the internal clock 20 which clocks date information such as a part and a second and has the function automatic or to set up date information manually to this internal clock 20. According to the electromagnetic waves specifically spread date information is set up automatically. The operativity is simplified so that time setting of the camera 10 can be carried out in still

simpler manual operation. This camera 10 is not provided with the battery-back-up function to that internal clock 20 but has the composition of not mounting a backup circuit and a backup cell. The driving source of the whole device is supplied by the cells 26 by which the chargeable and dischargeable rechargeable battery with which the terminals 24a and 24b of the power supply section 22 are equipped with the camera 10 enabling free attachment and detachment was accommodated such as a battery pack or a dry cell and current supply to the internal clock 20 is also performed by the electric power from this cell 26. In this specification term "time" decides that the information showing either of a date and time may be sufficient and the information which expresses time at least may be sufficient. The information of "the matter relevant to an others and time event for example the public holiday and the day of what **" known widely of the day of the week which relates to a date closely the information concerning the six basic labels printed on a traditional Japanese calendar and the age of the moon further etc. may be included in date information.

[0017] When each part of the camera 10 is explained the image pick-up part 12 including an optical system block including an imaging lens a mechanical shutter mechanism a diaphragm etc. and the two-dimensional solid state image pickup device with which the primary color light filter was arranged an image sensor It drives following the control signal outputted from the arithmetic processing section 14 and the point sequential picture signal according to the optical image by which image formation was carried out to the imaging surface is generated. The image pick-up part 12 is further equipped with it by an analog processing circuit and the analog digital conversion circuit which changes into digital value the picture signal by which analog processing was carried out and an analog processing circuit The level of the picture signal generated with the image sensor is controlled and a conversion circuit changes into digital image data the picture signal by which the level control was carried out and outputs it to the arithmetic processing section 14.

[0018] The arithmetic processing section 14 is a central processing circuit which has a control facility which carries out generalization control of the this camera 10 whole. While generating a control signal required for operation of each part according to the control program and various parameters which the arithmetic processing section 14 comprised a microcomputer and its peripheral circuit and were stored in the unillustrated store circuit Data processing of the picturized picture signal is carried out and the processing result is outputted to the recording reproduction section 16 and the indicator 30. This data processing 14 has digital image processing capabilities such as the color correction processing and gray-level-correction processing to image data and YC conversion process.

[0019] The internal clock 20 the indicator 30 which displays a variety of information including the picture information photoed or reproduced and date information and the final controlling element 32 containing an operating button an operation dial and an electric power switch are connected to the arithmetic processing section 14. The nonvolatile memory 34 and the receive section 36 are further connected to

the arithmetic processing section 14 and the nonvolatile memory 34 has a storage area which memorizes date information and various setup information respectively. [0020] The nonvolatile memory 34 in this example is a rewritable store circuit which byte rewriting type EEPROM and block deletion type EEPROM are applied and carries out the hold stores of the information without carrying out a battery back-up for example. The nonvolatile memory 34 is provided with the following.

The setup information storage area where the parameter etc. which are needed in the motion control of this camera 10 are accumulated.

The date information storage area where two or more date information is stored. In a date information storage area in an initial state the date information of one of these days is memorized at the time of manufacture of this camera 10 or shipment and the date information according to operation of the camera 10 is memorized in updating. These setup information by which hold stores were carried out and date information are read according to the demand from the arithmetic processing section 14.

[0021] The functional constitution of this arithmetic processing section 14 is explained with reference to drawing 4. Especially the figure is a functional constitution figure showing the functional division relevant to time setting out.

[0022] The operation primary detecting element 400 detects the operation information from the final controlling element 32 and notifies the detected operation information to each function part. Besides the mode selection dial which sets photography reproduction mode etc. to the final controlling element 32 shown in drawing 1 An operating button and switch such as *****a submit button a menu selecting button and an electric power switch are arranged and the operation primary detecting element 400 outputs the operation information which shows what the electric power switch was operated for by the ON state to the power turn primary detecting element 402. If time setting-out mode is set up especially at the time of manual setting the operation primary detecting element 400 will detect the state of increment of the time by a button operation a decrement setting-out repositioning and second doubling operation and will notify the operation information according to these to the correction processing section 404.

[0023] The power turn primary detecting element 402 has the function to start the comparison process part 406 while setting each part as an initial state according to the operation information showing the operation to an electric power switch. The comparison process part 406 compares the total chronaxie of the internal clock 20 with the date information given from the read-out treating part 408 and notifies the comparison result to the judgment part 410.

[0024] The read-out treating part 408 is a function part which reads the date information memorized by the nonvolatile memory 34 and the date information memorized by the external recording medium 18 connected to the recording reproduction section 16. The read-out treating part 408 transmits the newest date information to the comparison process part 406 among the read date information.

If abnormality information is notified from the right-or-wrong judgment part 418, the read-out treating part 408 will read the these-memorized date information and will transmit the newest date information to the attaching part 422. The latest date information at the time of carrying out manual setting by this can be displayed on the indicator 30.

[0025] The judgment part 410 is a function part which judges whether it is necessary to correct the total chronaxie of the internal clock 20 according to the comparison result in the comparison process part 406. When correction is required, the judgment part 410 starts the receiving processing part 412 when correction is unnecessary, that is notified to the writing processing part 414 and the hold stores of the present date are carried out. If the total chronaxie of the internal clock 20 receives the comparison result that it is a latent root rather than the time which the date information from the read-out treating part 408 shows, the judgment part 410 specifically judges that the time check of the internal clock 20 is continued normally and the write-in directions for making the date information of the internal clock 20 store in the nonvolatile memory 34 to the writing processing part 414 are given. On the contrary, it judges that the judgment part 410 had the abnormalities of the time check of the internal clock 20 having stopped when the comparison result that the time from the read-out treating part 408 was a latent root was received and in order to set up a present date automatically, the receiving processing part 412 is started.

[0026] If the receiving processing part 412 is started by the judgment part 410, it will output the request to receipt which receives date information to the receive section 36. It has a function which notifies the date information outputted from the receive section 36 to the discrimination processing part 416 and inputting longitude latitude information and notifying to an unillustrated position recognition part etc. extracts the receipt information received in the receive section 36 and is transmitted to a desired function part.

[0027] The discrimination processing part 416 is a function part which recognizes the suitable present date according to the address of this camera 10 based on the date information spent from the receiving processing part 412. In this example, Coordinated Universal Time (UTC) is changed at Japan Standard Time (JST). When the recognized date information shows the total day from January 1, the discrimination processing part 416 is good to have a function which changes into the date information showing the moon and a day according to the calendar information according to each year. The discrimination processing part 416 notifies the changed processing result to the right-or-wrong judgment part 418. The right-or-wrong judgment part 418 is a function part which judges the compatibility of the date information notified from the discrimination processing part 416. It makes the date information once store in the attaching part 422 while it notifies that to the setting processing part 420 when normal [the discrimination processing part 416 distinguishes whether date information was received normally and]. On the contrary, when date information has abnormalities, the discrimination processing part 416 notifies the abnormality information to the

read-out treating part 408.

[0028]The setting processing part 420 is a function part which performs time setting out to the internal clock 20. Specificallythe setting processing part 420 outputs the rewriting command for setting the date information transmitted to the attaching part 422 from the right-or-wrong judgment part 418 as the internal clock 20 to the internal clock 20. The setting processing part 420 outputs the write-in command for setting the date information transmitted to the attaching part 422 from the correction processing section 404 as the internal clock 20 to the internal clock 20.

[0029]The correction processing section 404 corrects the date information stored in the attaching part 422 according to operation informationand it sends the setup instruction to the setting processing part 420 while making the corrected date information transmit to the internal clock 20 from the attaching part 422 following the operation information which shows the completion of setting out.

[0030]The writing processing part 414 reads the total chronaxie clocked with the internal clock 20 from the setting processing part 420 following the write-in directions notified from the judgment part 410and writes the date information in the date information storage area of the nonvolatile memory 34. The writing processing part 414 has a function which writes the set-up newest date information in the nonvolatile memory 34when time setting out is performed by the setting processing part 420 to the internal clock 20.

[0031]On the other handthe operation primary detecting element 400 will transmit operation information to the correction processing section 404if the operation information according to manual operation is detected. In the case of this manual settingthe attaching part 422 reads the present total chronaxie from the internal clock 20carries out the hold stores of thisgives this to the correction processing section 404and has the function to make a desired value correct.

[0032]Howeverin this examplewhen the correction processing section 404 modifies the date information which it was inputted into the attaching part 422 and carried out hold stores from the read-out treating part 408 according to operation informationthe load of time setting out is reduced. Under the present circumstancesthe read-out treating part 408 begins to read the date information stored in the nonvolatile memory 34 and the external recording medium 18respectivelyjudges the newest information among these date informationand carries out the hold stores of the latest date information to the attaching part 422. The attaching part 422 notifies the date information memorized to the display processing part 424 in updatingand the display processing part 424 carries out the monitor display of the date and time according to the date information to the indicator 30. The correction processing section 404 changes the memory value of the attaching part 422 according to the operation information which looked at the time currently displayed and was operatedand the attaching part 422 notifies the changed date information to the display processing part 424. The correction processing section 404 makes the new date information which is corrected to the attaching part 422 and memorized transmit to the internal clock 20 while notifying

the directions which make the memory value set it as the internal clock 20 to the setting processing part 420 according to the operation information for which operation completion is shown. An operator can make a correction change from the value which the date information read from the nonvolatile memory 34 or the external recording medium 18 shows by such composition.

[0033]After the setting processing part 420 carries out temporary setting of the date information sent to the attaching part 422 from the right-or-wrong judgment part 418 to the internal clock 20 as it isThe correction processing section 404 reads the time of the setting day from the internal clock 20 to the attaching part 422makes it memorizecorrects the memory value according to operation informationand may be made to carry out formal setting out of the corrected date information at the internal clock 20.

[0034]Returning to drawing 1the internal clock 20 is a real-time clock which clocks time. The internal clock 20 in this example is a clock circuit with a calendar function which calculates the time containing a date and a day of the week. As shown in drawing 2 in detailthe oscillating circuit 200 is a crystal oscillation circuit which is stabilized and generates the oscillation signal of a crystal oscillator including the tuning fork type quartz resonator whose reference frequency is 32.768 kHz. The output of the oscillating circuit 200 is connected to the frequency divider 202.

[0035]The frequency divider 202 carries out the oscillation signal of reference frequency 15-step dividing ($1/2^{15}$)and outputs a 1-Hz clock signal. The output of the frequency divider 202 is connected to the time counter 204. The time counter 204 is a counter circuit which updates the date information of time and calendar information following the clock signal supplied from the frequency divider 202. A time counter counts up two or more items of date information of a year (YEAR)the moon (MONTH)a day (DAY)a day of the week (D/W)and time (at the time (HOUR) – part (MIN) and a second (SEC)) so that beam going up is possible respectively. Sunday corresponding to [day of the week] the date of calendar information – Saturday -- 1 -- it updates cyclically day by day. Read-out of the enumerated data in the time counter 204 and the setting variation of the enumerated data to the time counter 204 are performed via the shift register 206. The time counter 204 is constituted so that the calculation may be started from the time which initial value PS given to a power up from the initializing circuit 208 showsfor example. Howeveraccording to the date information given from the arithmetic processing section 14the total chronaxie of the internal clock 20 is corrected after that.

[0036]The shift register 206 is read-out and the writing circuit which output and input the data to the time counter 204and above-mentioned date information has a field by which hold stores are carried out. In the case of the writing of timeand read-outdate information is once held. The shift register 206 outputs a retention value to the time counter 204 or the input output circuit 210 following control of the control circuit 212.

[0037]The input output circuit 210 is a function part which transmits date

information to the shift register 206 and the arithmetic processing section 14 following the control from the control circuit 212 while transmitting the write-in command and read-out command which are sent from the arithmetic processing section 14 to the control circuit 212. The control circuit 212 has a function which controls transmission of the date information between the shift register 206 and the arithmetic processing section 14 while it performs storage control to the shift register 206 and performs control to the time counter 204.

[0038]When the voltage detector 214 detects the power supply voltage V_{cc} supplied to each part of the internal clock 20 and detects the voltage V_{ccit} it has the function to start the initializing circuit 208. The initializing circuit 208 is started by the source detecting circuit 214 and supplies initial value PS to the time counter 204. This initial value PS is the initial information immediately after powering on and is a value which went back in the past enough rather than the present for example shows 0 seconds of 0:0 part [on January 1 A.D. 1980]. However in this example after this initial value PS is set as the time counter 204 the total chronaxie of the internal clock 20 is automatically updated by arithmetic processing section 14 grade by the date information stored in the nonvolatile memory 34 or the external storage 18 and the date information by automatic setup.

[0039]The date information set as these internal clocks 20 is recorded on the header area of the graphics file as image attached information at the time of carrying out image recording to the external recording medium 18. Date information is used also as a time stamp at the time of graphics file creation. Furthermore date information is written in the nonvolatile memory 34 by the writing processing part 414 to predetermined timing at the time of operation of the camera 10. For example the time of detection of the turn off operation to an electric power switch etc. update periodically the date information memorized by the nonvolatile memory 34 at the time of starting. In this way the date information these-recorded on a recording medium is used when the newest value sets up the total chronaxie of the internal clock 20 according to a situation.

[0040]The recording reproduction section 16 is a recording-medium access circuit which has a function which reads and processes the information which wrote the graphics file and various management information containing date information and image data in the external recording medium 18 connected removable and was recorded on it by the external recording medium and is outputted to the arithmetic processing section 14. The recording reproduction section 16 in this example carries out compression processing of the image data outputted from the arithmetic processing section 14 and it performs the writing and read-out control according to the external recording medium 18 while it outputs the graphics file formed in the recording form according to the external recording medium 18. As the external recording medium 18 the memory card which has a semiconductor storage cell light a magnetic recording medium etc. are applied. In this example the storage cell containing EEPROM of a block deletion type [type / byte rewriting / **] and a collective erasure type flash memory is advantageously applied as a storage cell in which the external recording medium 18 is arranged in the case of

card shape. When the storage cell in the external recording medium 18 is a volatile memory it may have a battery-back-up circuit to the memory.

[0041] It is a power supply circuit which it returns to drawing 1 and the power supply section 22 connects to the positive/negative terminals 24a and 24b the cell 26 accommodated in the battery pack and supplies the electric power from the cell 26 to each circuit. Specifically the power supply section 22 has further the external input terminal 24c which inputs the DC-power-supply supply from the outside including the protection circuit 300 the main power supply control circuit 302 and the voltage conversion circuit 304 as the example of 1 composition is shown in drawing 3.

[0042] The protection circuit 300 is a safety circuit which protects the cell 26 and the camera 10 by carrying out current cutoff when the overdischarge of the cell 26 connected is prevented or the over-current from the cell 26 occurs. The output of the protection circuit 300 is connected to the voltage conversion circuit 304 and the main power supply control circuit 302 respectively and the voltage conversion circuit 304 When predetermined direct current voltage is impressed to the input it is a circuit which transforms the voltage into the voltage VDD suitable for the operating voltage of the internal clock 20 and is supplied to the internal clock 20. Thus if the cell 26 with current supply capability is connected to the terminals 24a and 24b the electric power from the cell 26 is supplied to the internal clock 20 through the protection circuit 300 and a voltage conversion circuit and it comprises this example so that the internal clock 20 may drive.

[0043] On the other hand the main power supply control circuit 302 is a power supply circuit which generates the voltage needed in each part of this camera 10 respectively for example supplies the voltage Vcc to each part of the inside of a device. This circuit 302 will perform current supply to each part if the electric power switch arranged at the final controlling element 32 is operated and if an electric power switch is operated once again in that power turn each part of the camera 10 will suspend the current supply to each part after end operation is completed.

[0044] Returning to drawing 1 the indicator 30 displays the picture according to the information which is provided with the electrochromatic display display panel in which a monitor display is possible and its drive circuit and is supplied from the arithmetic processing section 14 in the picturized picture. The date according to the functional menu display the guidance display and date information which are needed in the case not only of an image pick-up and a reproduced image but various setting operation and time the position information further acquired by a positioning function a digital map picture etc. are displayed on the indicator 30.

[0045] The receive section 36 is a receiving circuit which outputs a signal including the information showing the present time by receiving the electric wave which spreads the inside of the atmosphere and getting over. The receive section 36 in this example is a GPS signal receiver which receives with an antenna the electric wave sent out from two or more positioning satellites which go the earth around respectively and outputs the position information and date information

according to the input signal. The receive section 36 analyzes the navigation message (NAVDATA) contained in an input signal and recognizes the time of GPS made into reference time. The receive section 36 changes the time of recognized GPS at Coordinated Universal Time (UTC) and supplies the changed date information to the receiving processing part 412 of the arithmetic processing section 14. The receive section 36 generates the geographic coordinate information which positions a current position and shows that position coordinate and although it has the function to display the position of this camera 10 on a map or to perform a course guidance etc. according to this geographic coordinate information it omits the arithmetic processing section 14 about that minute explanation.

[0046] Although the electromagnetic waves which are transmitted from a transmission antenna and spread the inside of the atmosphere were received and the GPS signal is adopted in this example as an example which recognizes the date information included in the input signal. By receiving not only this but other electromagnetic waves such as long wave and broadcasting electric waves in the receive section 36 and getting over this invention may be constituted so that the date information by the time code etc. which were transmitted may be recognized. When using a broadcasting electric wave the vertical-retrace-line period (VBI) and audio part of a video signal can be used. Data broadcasting can be received and date information included in contents of broadcasts such as a date and time can be acquired. When it constitutes a cellular phone to this camera 10 including a portable telephone function so that connection is possible the date information which expresses the present time via a telephone line may be acquired to this camera 10.

[0047] The above composition explains operation of the digital camera 10 in this example with reference to drawing 5 – drawing 7. First in the date information storage area of the nonvolatile memory 34. The update date information which the date information which expresses the time of one of these days at the time of factory shipments is stored as a value which shows "1999.09.14 Tuesday 13:15:00" as shown for example in drawing 8 and shows an update date and the recorded image in the external recording medium 18 and its date information are in the state which is not yet stored. Imaging mode image size correction value and the various preset values that specify compression (image quality) mode are memorized and shipped to a setup information storage area for example and this camera 10 is crossed to an operator's hand. Current time is temporarily set to "1999.09.23 Thursday 09:55:00."

[0048] If the camera 10 is equipped with the cell 26 which has sufficient cell capacity and it is connected to the terminals 24a and 24b here as shown in drawing 5 A power supply is supplied to the internal clock 20 the internal clock 20 is reset initial value PS is set up and as shown in the figure the time check from "1980.01.01 Tuesday 00:00:00" is started with the internal clock 20 (Step 500).

[0049] Then if it progresses to Step 502 and the electric power switch of the final controlling element 30 is operated by the ON state the power supply for operation

will be supplied to camera 10 each part and it will be in the waiting state according to setting-out mode. It progresses to Step 506 here the arithmetic processing section 14 reads the date information clocked with the internal clock 20 and the date information stored in the nonvolatile memory 34 and old and new [of the time which these date information expresses] is compared. The date information of the nonvolatile memory 34 is read to the read-out treating part 408 and specifically this date information and the total chronaxie of the internal clock 20 are compared by the comparison process part 406. Here although information is adopted at the time of the shipment date shown in drawing 8 since the direction of the updated date information is the newest value when the update date information updated according to operation of this camera 10 is already stored in nonvolatile memory this is compared with a total chronaxie.

[0050] Subsequently according to a comparison result [in / it progresses to Step 508 and / Step 506] When the total chronaxie of the internal clock 20 judges that it is a latent root rather than the date information of the nonvolatile memory 34 it progresses to Step 520 Conversely when the direction of the date information memorized by the nonvolatile memory 34 is a latent root from the total chronaxie of the internal clock 20 it progresses to Step 510 and the receiving processing part 412 is started.

[0051] If it progresses to Step 510 and the transmit radio wave from a GPS Satellite will be received in the receive section 36 the date information included in that navigation message to which it restored will be analyzed by the receiving processing part 412 and the present time according to this date information will be recognized by the judging processing part 416. Subsequently in Step 512 it is judged by the right-or-wrong judgment part 418 whether the recognized time is normal. When normal it progresses to Step 514 and when unusual it progresses to Step 516.

[0052] In Step 514 if the date information received normally is transmitted to the attaching part 422 from the right-or-wrong judgment part 418 a write-in command will be notified from the setting processing part 420 to the internal clock 20 and the date information stored in the attaching part 422 will be set as the internal clock 20.

[0053] In the step 516 when receiving failures break out the date information memorized by the nonvolatile memory 34 and the date information accumulated in the external recording medium 18 are read to the read-out treating part 408 respectively. here the date information which expresses the newest time among these date information that carried out reading appearance is chosen and from the read-out treating part 408 it is transmitted to the attaching part 422 and memorizes. This date information is transmitted also to the display processing part 424 the display according to date information is displayed on the indicator 30 and temporary setting of the already memorized newest date information is carried out. When the date information of the update date in the nonvolatile memory 34 is not memorized but the date information at the time of factory shipments is memorized at this time the latter date information is adopted. Since it is the newest value memorized after shipping to a commercial scene when the date information

memorized according to operation of the camera 10 is memorized by the nonvolatile memory 34 this date information is adopted.

[0054] Subsequently in the correction processing section 404 the memory value of the attaching part 422 is corrected according to the operation information notified from the operation primary detecting element 400 and the corrected time is displayed on the indicator 30. This is checked by the operator and if the operation information showing operation completion is detected in the operation primary detecting element 400 it will progress to Step 514.

[0055] In Step 514 the date information memorized by the attaching part 422 is set as the internal clock 20 by the setting processing part 420. Subsequently it progresses to Step 518 and the date information set as the internal clock 20 is written in the date information storage area of the nonvolatile memory 34.

[0056] Thus in a reception success a present date is set up automatically and even if it is a case where they are receiving failures manual setting from the already memorized newest value is performed. Therefore change operating of the value which the latest information on the date information which the time and effort for time setting out was reduced and was recorded on the external recording medium 18 corresponding to image recording in that the nonvolatile memory 34 memorizes according to operation of the camera 10 **** shows can be carried out and the present time can be set up.

[0057] In Step 520 at the time of being the newest value from the value which the date information to which the direction of the total chronaxie of the internal clock 20 was read from the nonvolatile memory 34 shows at Step 508 on the other hand the total chronaxie of the internal clock 20 is read and this date information is written in the nonvolatile memory 34 like drawing 9 which the internal clock 20 shows an example which was continuing normal operation. At this time may record the present date information on the external recording medium 18 and in this case in Step 506. The date information and the total chronaxie of the internal clock 20 which were recorded on the external recording medium 18 are compared and when the direction of the present total chronaxie is progressing it shifts to the processing in Step 520 from Step 508.

[0058] Thus it progresses to Step 522 in the state where the present date to the internal clock 20 is normal and processing operation of camera 10 main part according to the setting operation to the final controlling element 32 is performed. For example the graphics file in which the image data and film informations such as date information by which the picture signal by which photoelectric conversion was carried out with the image sensor was processed for example compression coding processing was carried out when release ** was pushed where photographing mode is set up are included is written in the external recording medium 18. At this time the recording reproduction section 16 is recorded on the file management area of the external recording medium 18 as a time stamp of that recorder file with reference to the date information according to the total chronaxie of the internal clock 20. Setting out of the transfer mode which transmits the information recorded on the external recording medium where a computer processing

apparatus is connected to unillustrated interface circuitry will perform the file transfer between this camera 10 and a computer processing apparatus.

[0059]in this way -- if the operation to the camera 10 is completed and an electric power switch is turned off (Step 524)the current supply to each part of the camera 10 will serve as **but the current supply to the internal clock 20 is continued -- the time check -- operation is continued. Nextit is Step 504 when an electric power switch is operated by the ON state. Subsequent operations are performed as mentioned above. however -- if the cell 26 is removed from the main part 10 after Step 524the current supply to the internal clock 20 will serve as ** -- the time check -- operation stops.

[0060]Camera 10 main part the date information updated by the nonvolatile memory 34 is remembered to be is equipped with the cell 26and a situation in "18:30:00" in which 25 minutes passed is shown in drawing 10 here. In this caseif an electric power switch is operated and camera 10 main part startsin Step 506 shown in drawing 5the comparison test of the total chronaxie of the internal clock 20 and the date information memorized by the nonvolatile memory 34 will be carried out. In this caseby the direction of the time which shows the time which was in the direction of a total chronaxieand the latter date information shows progressingsince it is the newestit is judged that time setting out is required. Sowhen manual setting is performedthe newest date information is read into the attaching part 422 from the internal clock 20 among the date information recorded on the nonvolatile memory 34 and the external recording medium 18and correction processing to this value is performed. Thereforesince the date is not changed in the state which shows in drawing 10The date information which performs manual operation which corrects to present time "18:30:00" the portion of "1999.10.11 Time "16:26among moon 16:26:22":22" of the date information which accompanies a recorded imageand expresses the corrected time is set as the internal clock 20.

[0061]In Step 600 shown in drawing 6 here when operation of the internal clock 20 is explainedIf the current supply to the internal clock 20 occursthe feed voltage will be detected in the voltage detector 214 shown in drawing 2and initial value PS will be supplied to the time counter 204 from the initializing circuit 208 (Step 602). Subsequentlyif it progresses to Step 604it will shift to write-in modeand in this write-in modeif initial value PS given from the initializing circuit 208 is set as the time counter 204the time check from set-up initial value PS will be started by control of the control circuit 212.

[0062]In Step 606 following Step 600 or Step 604it is judged whether it is a set mode which performs time setting out to the internal clock 20and when it is in setting-out modethe write-in mode in Step 608 is set up with the internal clock 20. If the shift register 206 is controlled in this write-in mode in Step 700 by the state which can be written in to be shown in drawing 7it will progress to Step 702 and date information will be inputted into the input output circuit 210 through the arithmetic processing section 14. If the inputted date information is stored in all the bit shift registers 206it will progress to Step 706 from Step 704. While the date information stored in the shift register 206 is transmitted and set as the time

counter 204 the state of the shift register 206 which can be written in is canceled and it is controlled by Step 706 by HOLD status. subsequently -- following a 1-Hz pulse if it progresses to Step 708 and a start command is inputted from the control circuit 212 to the time counter 204 -- the time check of the time counter 204 -- the time check which a value counts up -- operation is started.

[0063] When returning to drawing 6 and reading the total chronaxie of the time counter 204 in Step 610 the total chronaxie is read to the shift register 206 controlled so that writing was possible and is once stored. If all the bits of this retention value are outputted to the input output circuit 210 at Step 612 it will progress to Step 616 from Step 614 and the shift register 206 will be controlled by HOLD status. In continuing Step 618 if a 1-Hz pulse is supplied it will ***** the total chronaxie of the time counter 204 by 1 second and a beam going up will occur in the next of the last value of each beam. It returns to Step 610 after this count-up and that total chronaxie is read to the arithmetic processing section 14 like the above-mentioned step 610 - Step 618 if needed. The retention value stored in the shift register 206 can be arbitrarily read to the arithmetic processing section 14 by canceling the HOLD status and reading to the input output circuit 210.

[0064] Thus in this example if the current supply to the internal clock 20 occurs the initial value information in the internal clock 20 will be set as the time counter 204 and the time check will be started. Therefore based on the total chronaxie by which the time check was started from this initial value and the date information stored in the nonvolatile memory 34 or the external recording medium 18 Comparison processing of the date information in Step 506 shown in drawing 5 can be performed and the necessity of total chronaxie correction to the internal clock 20 can be judged.

[0065] the time check calculated with the internal clock 20 in this example as explained above -- responding to the comparison result of the date information which a value expresses and the date information recorded with the camera 10 -- a time check -- judging the correction necessity of information -- a time check -- the case where it is judged that a value is normal -- the time check -- the value is memorized. And when it is judged that a time check is unusual date information is set up automatically and correction processing of the time based on the memorized date information is performed. Therefore not only the case of an automatic setup but when performing time setting manually the operating procedures by an operator are reduced.

[0066] After the camera 10 was equipped with the cell 26 the main power supply was supplied to each part and the time check from initial value PS was started with the internal clock 20 Before performing formal time setting out i.e. time correction the total chronaxie of the image data which photoed the field and the undecided date information at that time may be recorded on the external recording medium 18. For example when making time correction automatically in order to acquire exact date information the time for several seconds thru/or several minutes may be needed. It is also an operator's arbitration which timing performs

the setting out when by the case where time setting out is performed in manual operation except for the case where force clock setting operation and it is performed previously. In this case the total chronaxie of the period of the initial value by which a time check is started to the time of photography or image data recording is memorized with date information. It is good to rewrite the recorded information in the external recording medium 18 as a file stamp in which the date information in the film information attached to the image data which subtracted the total chronaxie of the period from the value which the date information set up behind shows and recorded the result of an operation previously or its recording date is shown. Therefore when setting up date information automatically flexibility is born to time until it performs the setting processing. That is it not only carries out immediately after supplying a main power supply to a device but it can carry out also after performing the original usual operation of a device and for this reason it gives priority to the original function of a device and the time setting processing [automatic and] by hand control can be utilized.

[0067] Next with reference to drawing 11 other examples to which this invention was applied are described. The digital camera 1100 of the electronic device in this example In that replace with the composition which receives a GPS signal receive date information from host devices such as a personal computer (PC) connected to the interface circuitry 1102 and time setting out to the internal clock 20 is performed. The explanation is omitted while attaching the same reference marks since the composition and operation which were explained in another point therefore the 1st example may be sufficient unlike the 1st example shown in drawing 1. The digital camera 1100 in this example is provided with the interface circuitry 1102 and the arithmetic processing section 1104.

[0068] Like the arithmetic processing section 14 shown in drawing 1 the arithmetic processing section 1104 carries out generalization control of the whole camera and it has a read-out function of setting processing and a total chronaxie to the internal clock 20 while it processes the picture signal picturized in the image pick-up part 12. Especially the arithmetic processing section 1104 in this example via the interface circuitry 1102 between host devices It has a function which controls the information transfer which performs transmission and reception of picture information or date information and time setting out to the internal clock 20 is automatically performed based on the date information sent out from a host device.

[0069] The interface circuitry 1102 connected to the arithmetic processing section 1104 The requirement signal which is connected to a host device via the connecting cable 1106 and receives the signal for camera recognition by the recognition software introduced into the host device in response to control of the arithmetic processing section 1104 and requires date information of a host device from a host device is outputted. Although a serial transmission mode with the lead using USB IEEE1394 etc. is applied the transfer form of the information between this interface circuitry 1102 and host device Information may be transmitted and received in other forms for example parallel form and not only an electrical signal but

the transmission forms which used infrared rays, an ultrasonic wave, etc. for example may be adopted. In addition to the function to transmit picture information using short-distance-radio data transmission technology, it may be made to perform time setting out.

[0070] If such composition explains operation of the camera 1100 in this example with reference to drawing 12, first the power supply of a host device and the camera 1100 will be made into an ON state respectively, and each will be connected by the connecting cable 1106 (Step 1200). It progresses to Step 1202 here, and if the recognition software which recognizes the camera 1100 is automatic or is started according to operation, the signal for camera recognition will be outputted from a host device at Step 1204.

[0071] If this signal for recognition is inputted into the interface circuitry 1102 via the connecting cable 1106, the arithmetic processing section 1104 of the camera 1100 will check that the software for recognition is started with this signal (Step 1206). Subsequently, if a date information requirement signal is outputted to a host device via the interface circuitry 1102 at Step 1208, this signal is checked with a host device (Step 1210), and the time signal according to the total chronaxie of the real-time clock which it has in the host device following this is sent out to the camera 1100 (Step 1212).

[0072] It progresses to Step 1214, and the camera 1100 will set the date information according to a time signal automatically as the internal clock 20 if this time signal is inputted. The operation same about this setting-operation as the operation in the above-mentioned example may be sufficient. Also in this example, like the 1st example, based on the date information recorded on the nonvolatile memory 34 and the external recording medium 18 in the case of time setting. Temporary setting of the date information can be carried out, the transfer method to the date information by which temporary setting was carried out can be performed, and setting processing [as opposed to the internal clock 20 for the corrected date information] can be performed.

[0073] thus -- the 2nd example -- a time check -- communication with the host device which has a function can be performed, the camera 1100 can receive the information clocked within the host device as a time signal, and the internal clock 20 in the camera 1100 can be set up automatically based on this transmitted time signal.

[0074] in addition -- having calendar IC in addition to this, for example, although this example showed the example which connects a personal computer to the camera 1100 -- a time check -- this camera 1100 is connected to other devices which have a function, and it may be made to acquire a time signal. In this case, the camera 1100 can be connected to other digital cameras, images, audio equipment, etc. which have been time set up, and the camera 1100 can be made to receive a time signal. It connects with the host device of the partner point via networks, such as the Internet, and may be made to acquire a time signal. In this case, in the time of carrying out the print order of the picture information of the external recording medium 18 with which this camera 1100 was equipped, when transmitting that order

file to the system which performs print service a time signal can be transmitted to the camera 1100 from the order reception server in a system. In this case that time signal can coincide the total chronaxie of the internal clock 20 of this camera 1100 with that time while being able to record and use it for the external recording medium 18 correctly as a part of order reception information.

[0075] Next with reference to drawing 13 the example of further others to which this invention was applied is described. In addition to the function of the arithmetic processing section 14 in the camera 10 shown in drawing 1 the digital camera 1300 in this example has the processing-image-recognition function to recognize the information which the picture which image data expresses shows. As shown in drawing 13 the arithmetic processing section 1302 of the digital camera 1300 in this 3rd example in time setting mode the dial window of the clock arranged at the field is pictured the time shown in the dial window which has a hour hand (clock short hand) the minute hand (clock long hand) etc. is recognized based on the image data and it has the function to set the date information showing the time and time according to a recognition result as the internal clock 20. In this figure the receive section 36 omits that statement.

[0076] The functional constitution of the arithmetic processing section 1302 is shown in drawing 14. In this figure the graphic display of the portion relevant to the time recognition processing based on a GPS signal is omitted and the reference mark same about the composition shown in drawing 1 and the same composition is attached and that explanation is omitted. The arithmetic processing section 1302 in this example is provided with the image input part 1304 and the recognizing processing part 1306.

[0077] The image input part 1304 is a function part changed into the data format which inputs the image data pictured and processed in the image pick-up part 12 according to the operation information detected in the decision result in the judgment part 410 or the operation primary detecting element 400 and suits recognition processing in time setting-out mode. As this decision result was mentioned above it judges whether it is necessary to correct the total chronaxie of the internal clock 20 and when correction is required the image input part 1304 is started.

[0078] The image input part 1304 is changed so that binarization of the inputted image data may be carried out and a monochrome picture may be expressed it cuts off and leaves a portion still more nearly unnecessary for image recognition starts the image data showing the picture of a required portion and outputs it to the recognizing processing part 1306.

[0079] The recognizing processing part 1306 has the function to recognize the center-of-rotation position of the 12:00 direction the hour hand and the minute hand in a dial window and the function to extract the hour hand and the minute hand in a dial window and measures angle of rotation of the hour hand on the basis of a direction and the minute hand at 12:00. The recognizing processing part 1306 recognizes the "time" of being shown of a hour hand from measured angle of rotation and recognizes "part" which the minute hand shows. The recognizing

processing part 1306 creates the time information according to the recognition result and outputs it to the right-or-wrong judgment part 418.

[0080] In the right-or-wrong judgment part 418 when it judges whether the time recognized by the recognizing processing part 1306 is the time which may exist normally and it is judged that normal time is shown while transmitting the time information to the attaching part 422 a normal purport is notified to the setting processing part 420. The time arranged at least by this at the dial window can be set as the internal clock 20. Conversely when the recognition result in the recognizing processing part 1306 is judged to be unusual abnormality information is notified to the read-out treating part 408. Thereby time correction processing based on the memorized date information can be performed like the 1st example. In this case when a correctable recognition error occurs that time setting out has little influence and easily according to the grade of the unusualness of a recognition result though indefinite temporary setting of the time is carried out and manual operation may be made to perform corrected time processing to this temporary setting value. That is it is possible to correct only the portion which the recognition error generated.

[0081] Although this example explains as an example the case where time recognition over the analog clock of a needle type is performed The plotting board etc. of the digital watch which carries out digital display not only of this but the time can be picturized the time shown by the image data can be recognized for example with techniques such as pattern matching and the time according to a recognition result can also be set as the internal clock 20.

[0082] The above functional constitution explains operation of the digital camera 1300 in this example with reference to drawing 15. The following explanation is the cases where the time setting processing based on an image pick is started following manual operation. An ON state's operation of the electric power switch arranged at the final controlling element 30 where the camera 1300 is equipped with the cell 26 will supply a main power supply to each part of the camera 1302 (Step 1500). To the internal clock 20 the time check from after wearing of the cell 26 is started like each above-mentioned example.

[0083] If ***** of the final controlling element 32 is pushed as shown in Step 1502 here the operation information will be notified to the display processing part 424 and the image input part 1304 from the operation primary detecting element 400. The display processing part 424 in Step 1504 generates the image data which displays on the indicator 30 the message which stimulates the operation for time setting and outputs it to the indicator 30. As a result in this example a screen display of the character "input time to see you photo the clock for time setting" is carried out.

[0084] Subsequently if it progresses to Step 1506 it will be judged whether release operation was performed among the operations to the final controlling element 32 or the key for a numerical input was pressed. If release operation is detected here the picture signal picturized in the image pick-up part 12 will be inputted into the arithmetic processing section 1302 and predetermined image processing will be

performed to this picture signal. In the case of the image pick-up in this time setting processing it controls by this example to make that opening amount small and to take deep depth of field in controlling an imaging lens automatically to a macro mode possible [short-distance photography] and adopting an iris diaphragm. A close-up of a small wrist watch etc. can be taken by this and a photograph can be taken clearly. When luminance difference of a dial window and an indicator cannot fully be photographed according to a photographing condition When the indicator or the dial window is formed so that a flash device may be made to emit light for example it may have metallic lustre a photograph can be taken by fully raising contrast with a dial window by the catoptric light.

[0085] In continuing Step 1510 binarization processing which makes an intermediate luminance level a threshold to the processed color image data further for example is performed and the binary picture data of gray scale is created. In this case according to each luminosity of a dial window and an indicator display-in-white processing may be performed to image data. In the image input part 1304 logging processing to the portion which performs image recognition is performed further and the started image data is transmitted to the recognizing processing part 1306.

[0086] If this image data is inputted into the recognizing processing part 1306 the center-of-rotation position of the 12:00 direction in the dial window within that picture a hour hand and the minute hand will be recognized and a hour hand and the minute hand will be extracted further. subsequently -- a dial window -- a top -- 12 -- o'clock -- a direction -- a standard -- carrying out -- a hour hand -- and -- the minute hand -- angle of rotation -- measuring -- having -- having measured -- angle of rotation -- from -- a hour hand -- being shown -- " -- the time -- " -- and -- the minute hand -- being shown -- " -- a part -- " -- recognizing -- having . The recognition result is changed into time information and is outputted to the right-or-wrong judgment part 418 from the recognizing processing part 1306.

[0087] If it progresses to Step 1512 when it is judged whether time recognition was successful and it is successful it will progress to Step 1514 and the time according to a recognition result will be set as the internal clock 20. Conversely when recognition is unsuccessful it progresses to Step 1516 from Step 1512 and the monitor display of the message of a purport "which has not recognized time" is carried out to the indicator 30. Then it returns to Step 1504 the message to which operation is urged is displayed and subsequent processings are performed.

[0088] On the other hand if it is judged that the key for a numerical input was pressed at Step 1516 it will progress to Step 1518 and the date information recorded on the camera 1300 or the external recording medium 18 will be displayed on the indicator 30 as a candidate of a modification time. The date information corrected by an operator's inputting and doing the transfer method of the numerical value etc. looking at this display and progressing to Step 1514 is set as the internal clock 20.

[0089] When performing time setting as mentioned above the dial window and needle of a certain clock can be photoed close the time which the image pick

expresses can be recognized and the recognition result can be set as the internal clock 20.

[0090] The image data used for time recognition may be based not only on the image data produced by picturizing with this camera 1300 but on other pictures. For example when the picture information showing the present time is provided from systems such as the Internet. It is possible to establish predetermined interface circuitry in this camera 1300 to input picture information into it to recognize the time according to the inputted image and to set the date information according to the recognition result as the internal clock 20. Although the clock was made into the example and explained as a picture of a recognition object by this example, the coded data which displays a numerical value and a character in prescribed format for example, picturizes one dimension or a two dimensions bar code and corresponds can also be recognized.

[0091] Although processing image recognition was performed, it may constitute from this example so that not only this but the time which inputs analog informations such as a sound and that sound expresses for example may be recognized. In this case, the sound showing a day or time can be made to input into the camera 1300 via a telephone line etc. A present date can also be set as the internal clock 20 by inputting into this camera 1300 the audio signal detected with the microphone and analyzing and recognizing the audio signal. In this case, an operator's voice can perform time setting promptly.

[0092] Although the angle from the 0:00 standard of each needle showed the composition for which present time and part are recognized in this example, it may be made to recognize time not only this but based on the angle between each needle and the angle from the reference position of at least one needle for example. It is also possible to detect the field on the dial window which each needle shows to compare this with the field on a time decision table and to generate the time information according to a collated result. It can add to the characteristic function of this example, the character recognition function to which the character code corresponding to a picture or a sound is made to apply to the composition which performs recognition processing to a picture or a sound can be added and characters such as a comment to an image pick can be recorded on the external recording medium 18 with the image data. The digitized speech information may be recorded with image data.

[0093] Although the composition which does not have a battery-back-up circuit to the internal clock 20 respectively explained in each above-mentioned example in order to cope with short-time power off it does not bar maintaining the current supply to the internal clock 20 with an electric double layer capacitor etc. the electric power supplied from a capacitor for example between the battery exchange performed in several seconds thru/or tens of seconds when it constitutes in this way -- the time check of the internal clock 20 -- time maintenance of predetermined is carried out for operation.

[0094] As mentioned above, since a time transfer method can be performed with the value as the starting point which the date information memorized by the device

shows when date information such as time and time is automatically set as electronic devices such as a camera and it sets up in manual operation to have explained. It is reduced compared with the case where an operating process resets up from initial value P and operational troublesomeness is reduced. The timing which performs time setting out is possible also for after the event [of camera photographing and image recording] and when it starts to use a device after it performs cell wearing since it can correct the date information of the photograph recording later priority is given to the original function of a device and it can be used previously. Thus a device with which especially this invention records date information on recording media such as a memory. It especially applies to especially portable electronic devices such as a camera and it is effective and further reduction or its composition scale can be made small and the battery-back-up circuit to the internal clock 20 is contributed to a small weight saving. Automatically or easily since time setting out can be performed the battery-back-up mechanisms to an internal clock are reducible.

[0095]

[Effect of the Invention] Thus also in the case where according to this invention contribute to the small size of an electronic device a weight saving and a cost cut and time setting out to the clock in an electronic device is performed automatically and time setting out is carried out in manual operation a man-machine interface is good -- operation -- a simple electronic device and time setting method are provided.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing one example of the digital camera in which this invention was applied.

[Drawing 2] It is a block diagram showing the example of 1 composition of the internal clock in the example shown in drawing 1.

[Drawing 3] It is a block diagram showing the example of 1 composition of a power supply section in the example shown in drawing 1.

[Drawing 4] It is a block diagram showing the example of 1 composition of the arithmetic processing section in the example shown in drawing 1.

[Drawing 5] It is a flow chart which shows the example of a digital camera of operation.

[Drawing 6] It is a flow chart which shows the example of an internal clock of operation.

[Drawing 7] It is a flow chart which shows the example of an internal clock of operation.

[Drawing 8] It is a figure showing the state where the date information at the time of factory shipments was recorded.

[Drawing 9] It is a figure showing the state of updating the total chronaxie of an

internal clock.

[Drawing 10] It is a figure showing the state where date information is recorded on the external recording medium.

[Drawing 11] It is a block diagram showing other examples of the digital camera in which this invention was applied.

[Drawing 12] It is a flow chart which shows the example of a digital camera and a host device of operation.

[Drawing 13] It is a block diagram showing the example of further others of the digital camera in which this invention was applied.

[Drawing 14] It is a block diagram showing the example of 1 composition of the arithmetic processing section in the example shown in drawing 13.

[Drawing 15] It is a flow chart which shows the example of a digital camera of operation.

[Description of Notations]

10 Digital camera

12 Image pick-up part

14 Arithmetic processing section

20 Internal clock

22 Power supply section

26 Cell

34 Nonvolatile memory

36 Receive section
